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ABSTRACT

Taiwan has recently changed from an agricultural to an industry-intensive society. Vocational education should assume the responsibility of educating students to meet the manpower needs of industry, and vocational education programs have rapidly expanded. The government lists technical and vocational education as one of the top priorities in the industrial construction project. To achieve its primary goal of preparing manpower for meaningful employment in industries, vocational education must ensure that the curriculum reflects actual employment needs, both in types of employment and in skill levels. Two factors that should be considered in the adaptation of vocational and technical education curricula are the individual aspect and socioeconomic aspect. Curricular content should be adapted to help students cope with the demands of the nation's economic growth and also to meet individual needs. The ideal curriculum development team includes individuals with expertise in: curriculum design (educators, curriculum specialists, students), pedagogy (technical-vocational teachers), and socioeconomic sciences (administrators, politicians, industrialists, economists, and sociologists). A curriculum management system can be divided into three processes: planning (define objectives and set priorities of curriculum development), organizing (develop a curriculum and specify performance criteria), and controlling (conduct internal evaluation, produce revised draft, and try out curriculum). (Nine figures are provided.) (YLB)

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CURRICULUM DEVELOPMENT AND ADAPTATION
IN VOCATIONAL EDUCATION IN
TAIWAN, REPUBLIC OF CHINA

Tien-Jin (Frank) Chang

中華民國職業教育課程發展與適應問題之探討

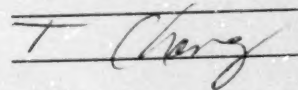
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I. Introduction

We are privileged to be living in one of the most exciting periods of time known in the history of humankind. We are constantly made aware of the changes taking place in our world through instant global communications. We are able to travel to beforehand unimaginable places, arriving before we leave, through the marvels of supersonic transportation. We are able to move mountains, create new waterways, and otherwise alter our environment through new construction techniques. We are able to improve the quality of our life as we manufacture new products such as industrial robots, computer, space shuttle which minimize the burden of human labor.

In coping with the problems of human existence, people have created societies that are diverse and complex. Therefore, the institution of education has been established as a societal process with the goal of understanding and enhancing human potential. The educational system is charged with the responsibility of preparing children to assume a constructive role in the world of work. The various disciplines within the educational system are designed around a body of knowledge which has purpose for the learner. The purpose is expected to be learned, assimilated, and transmitted into helpful activity by the learner demonstrating his/her ability to contribute to and participate effectively in industry. As Figure 1 shows, it is to assist students to develop industrial literacy, career literacy and technological literacy so that they are capable of interacting with the culture & technology environment.

Figure 1 Order to assist students to develop



So that they are capable of interacting with the culture environment

We live in a highly industrialized society, and technology advances all the time. In a recent century, Taiwan has gradually changed from agricultural to industry-intensive approachment in the society structure. A large number of skilled workers of various levels should be entering the industries. For the time being, vocational education in Taiwan, R.O.C. should assume the responsibility to educate the quality students to meet the manpower needs of industry. Therefore, our vocational education programs are rapidly expanded in the transition period, as shown in Fig. 2.

Figure 2 Student ratio between vocational H.S. and general H.S.

STUDENT RATIO YEAR	PROGRAM	
	VOCATIONAL HIGH SCHOOL	GENERAL HIGH SCHOOL
1946	3.5	6.5
1957	4.0	6.0
1980	6.8	3.2
1981	7.0	3.0

It has been made very clear that vocational education in Taiwan will play an important role in industrializing the nation from now on. Furthermore, since National Taiwan Institute of Technology was founded, our industrial technical and vocational education system has become an integrated one including industrial vocational high school, junior college of technology, institute of technology and graduate school. In order to achieve the vocational education goals and satisfy the national economic growth requirements, we began to implement the unit-trade education in vocational education in 1953 and now we implement cluster

program, competency-based education and career education in this field. As a matter of fact, our government lists technical & vocational education as one of the top priorities in the industrial construction project.

II. Curriculum Derivation

The primary goal of vocational education has been, and will continue to be, the preparation of manpower for meaningful employment in industries. If vocational education is to achieve this goal, we must ensure that the curriculum offered reflects actual employment needs, both in the types of employment and in its skill levels. To do this requires a plan, and the plan is called a curriculum. To further clarify the curriculum goals, Fig. 3 is designed to provide you with the skills you need to direct the curriculum development process in such a way as to ensure a responsive, articulated vocational program geared to the employment needs of both its students and the community it serves.

Figure 3 Curriculum Goals

KEY ITEMS	GOAL SETTING
KEY WORD	SKILL, KNOWLEDGE, ATTITUDE
KEY CONCEPT	WHAT IS TO BE TAUGHT
KEY PURPOSE	GAINFUL EMPLOYMENT

However, typical model shown in Fig. 4¹ provides us with the base for the derivation of a curriculum. This model is beneficial for administering our curriculum adaptation system.

1. Jackson's Mill, Industrial Arts Curriculum Theory, A.I.A.A. 1980, P.17.

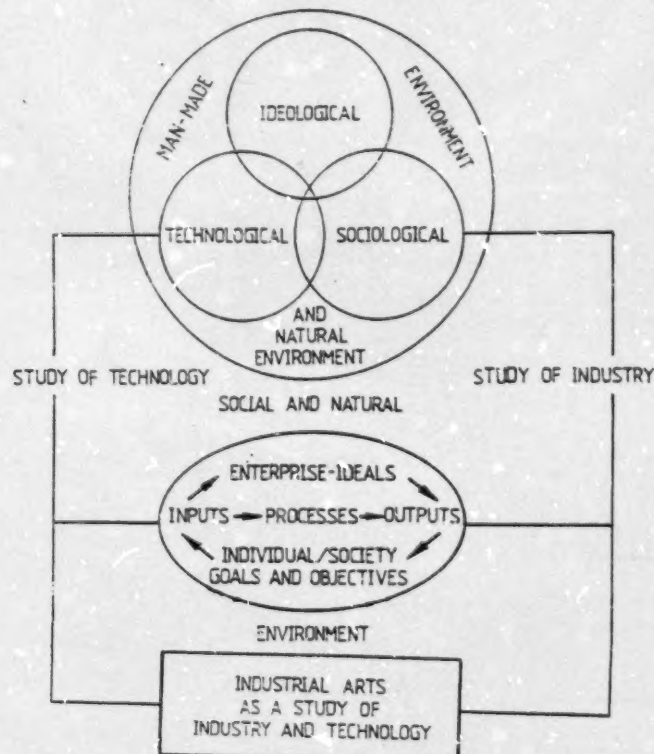
III. Factors in Curriculum Adaptation System

Two factors that should be considered in the adaptation of vocational and technical education curriculum are the individual aspect and the socio-economic aspect.

Vocational education is aimed mainly to provide students with various knowledge, skill and experience they need to make a living in a world of technology. Therefore, a vocational education curriculum should be designed or improved in consideration of the learner need, individual discrepancy and capability.

The development of a curriculum is often under the influence of social, economic and political circumstances. On the other hand, the curriculum can give an impetus to social and economic progress.

Figure 4 A Model For Derivation of Curriculum



Thus, a vocational and technical education project should be adapted to the changes in social resources, cultural background, and the structure of trades and labor force.

With the rapid development of science and technology in the world today, the way of working differs from that before. Curricular contents should be adapted in such a way as to cope with the demands of both the nation's economic growth and individual needs.

IV. Organizational and Administrative System

In viewing the situation of Taiwan, Republic of China, the Ministry of Education should take the major responsibility for the adaptation of curriculum, devoted to assessing, designing, implementing and evaluating required curricula. The ideal curriculum team will include the expertise in at least three areas. They are curriculum design, pedagogy, and socio-economical sciences. Those belonging to curriculum design group are educator, curriculum specialist and student. Those for pedagogy are skilled and experienced tech-vocational teachers. The socio-economical science group includes administrator, politician, industrialist, economist and sociologist. Fig. 5 shows a curriculum improvement model for technical and vocational education.

V. Curriculum Management System

A Curriculum management system can be divided into three processes, namely, planning, organizing and controlling. The curriculum objectives are defined and the priorities of curriculum development are set in the planning process. The major tasks in the organizing process are dealing with curriculum development and specifying performance criteria. The controlling process focuses on conducting internal evaluation, producing revised draft and trying out the curriculum. Fig. 6 shows the management processes of curriculum development for vocational education.

Figure 5 A Curriculum Improvement Model For Technical
& Vocational Education

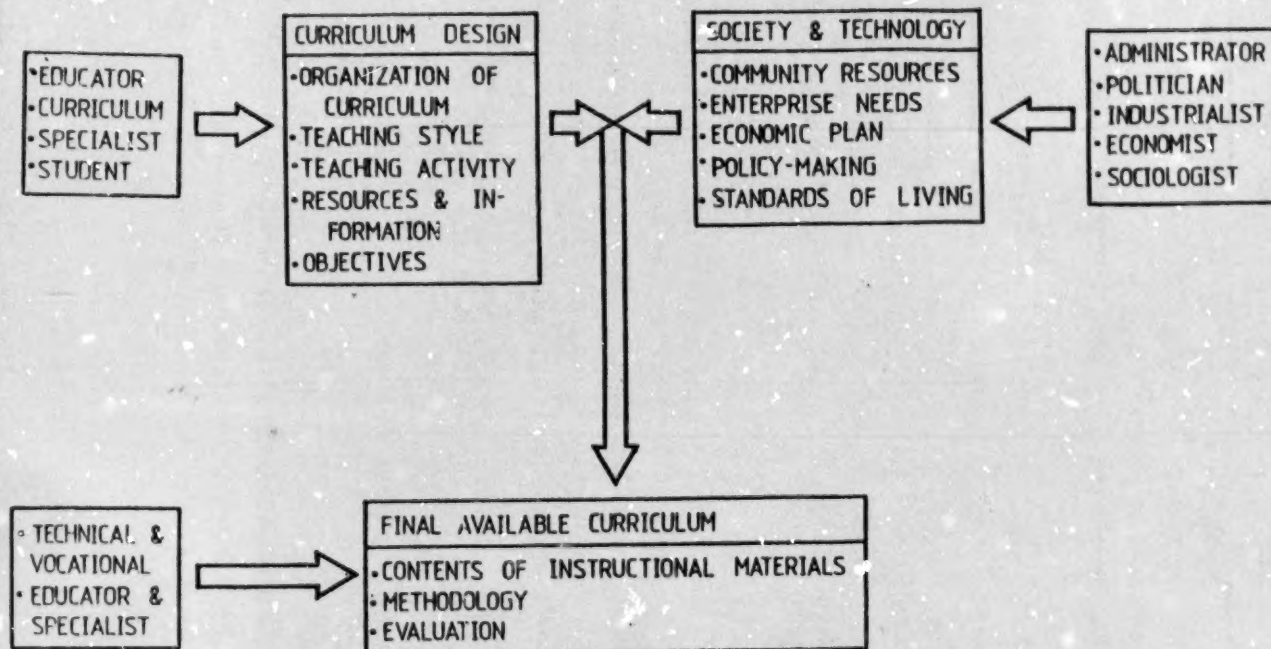
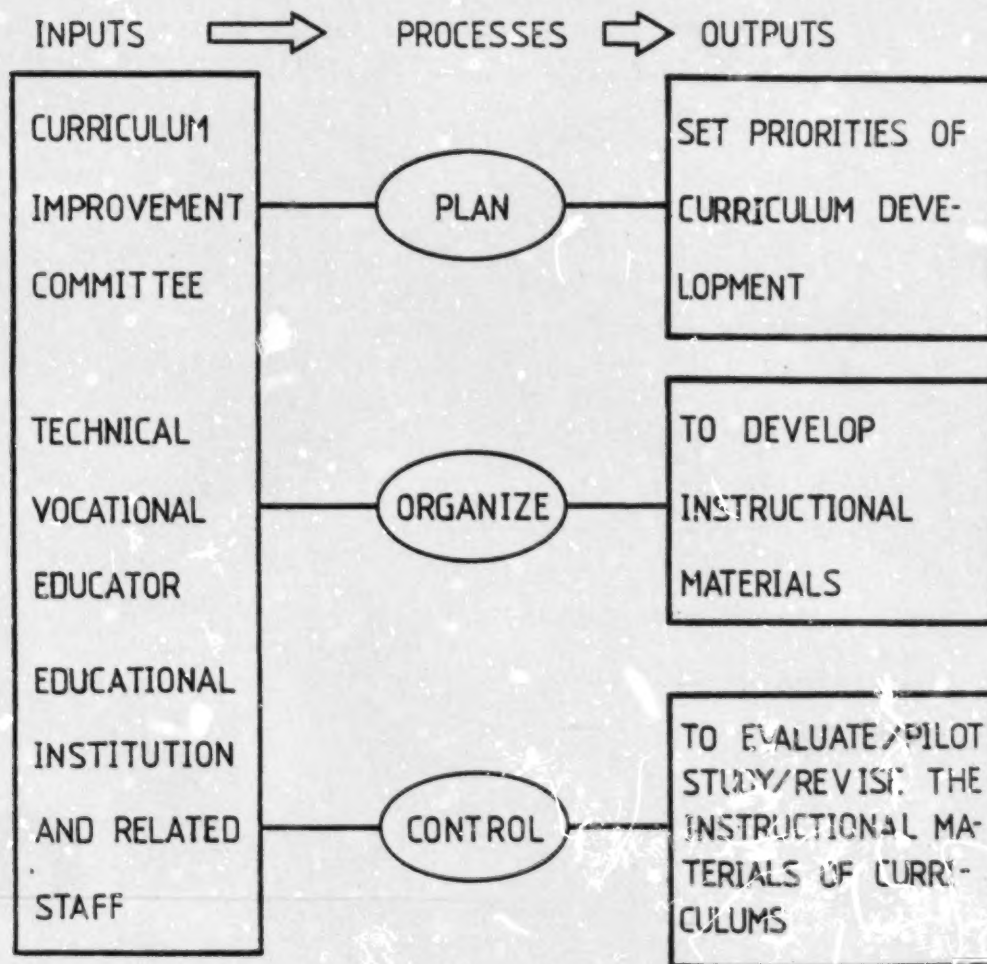


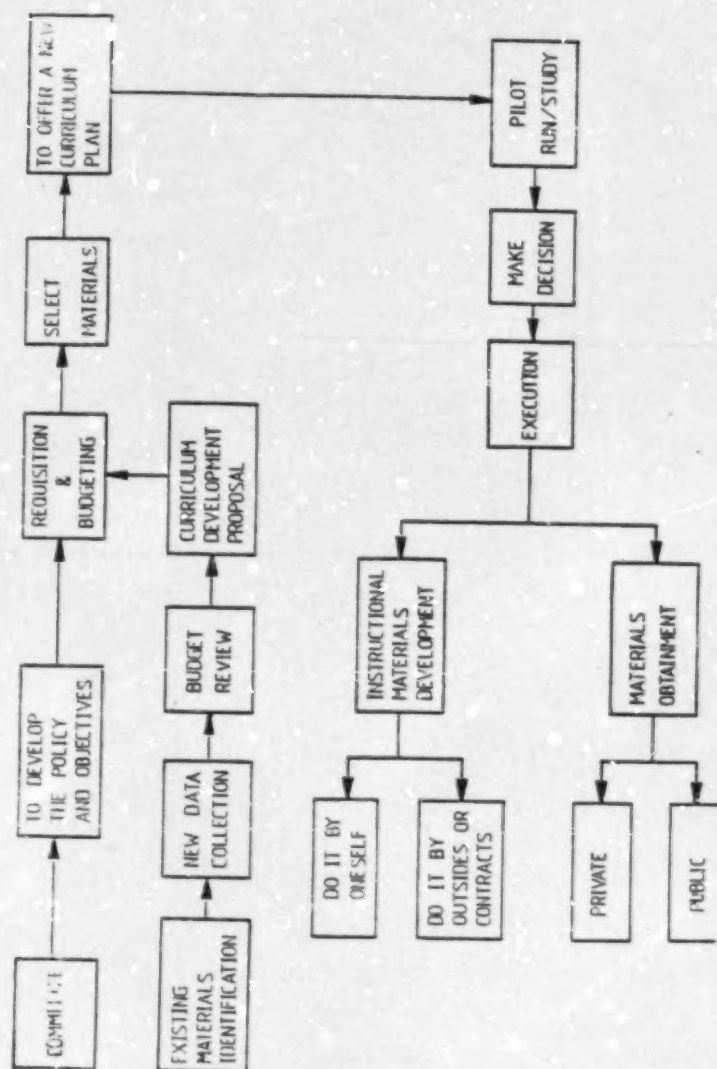
Figure 6 The Processes of Curriculum Management



In the planning process, the curriculum committee facilitates its work by careful planning of its role and activities. The committee members may include educational administrators, vocational school teachers, vocational and technical educators, and specialists in trades and industries. It plays the role of decision making in priority setting in curriculum development and improvement. The main tasks of a curriculum committee in this planning process are further defined as the model in Fig. 7. There are some principles that the curriculum committee should

also observe. A design project should be undertaken only when a verified need is not being met. It is unwise to proceed with curriculum development until it is clear that minimal resources and support will be provided, personnel and budget, for example².

Figure 7 Planning Processes of Curriculum Adaptation



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². David Pratt, Curriculum Design And Development (New York. Harcourt Brace Jovanovich Inc. 1980). P.104

Assess the feasibility of a proposed course of action. Before beginning to plan a curriculum, the committee should endeavor to find out what related curriculum work has already been done in foreign countries. With all these being considered, the committee may submit the suggested programs to the educational authorities for overall review.

After the new instructional materials are accomplished, they are to be tried out. In organizing process, four major procedures are indispensable: research, development, diffusion and adoption. The organizational process as shown in Fig. 8 illustrates three of the four procedures. Some of the elements that need to be focused on are setting criteria for measures of achievement, designing formal tests, defining entry characteristics of learners, selecting instructional strategies and logistics.

Foundamentally, the controlling process aims to ensure that the outcomes (curriculum or instructional materials) will satisfy the needs of social environment. The curriculum can make an impact on the learner only when it has been implemented. Therefore, the curriculum team should develop the criteria of evaluation with the view of attaining the curriculum objective. The main features to be assessed in program evaluation are effectiveness and acceptability³. In this respect, the criteria of evaluation refer to the content validity of the curriculum in relation to the employment requirements at the present time and in the future as well. Curriculum evaluation can also provide feedback for further revision, adjustment and re-evaluation of the curriculum developed. Fig. 9 shows some major work that ought to be done in controlling process.

3. David Pratt, Curriculum, Design And Development (New York: Harcourt Brace Jovanovich Inc. 1980) P.408

Figure 8 The Organizational Processes

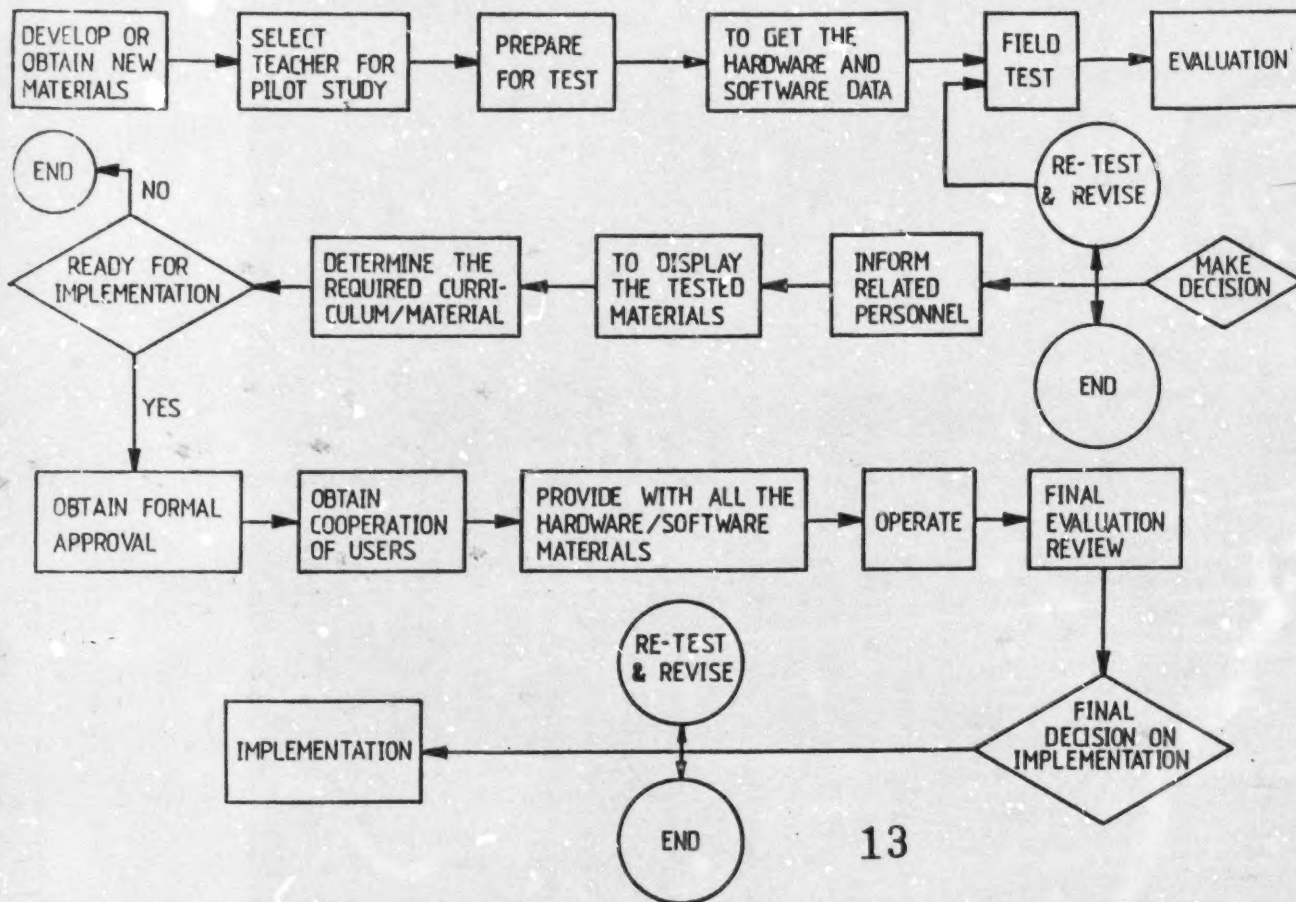
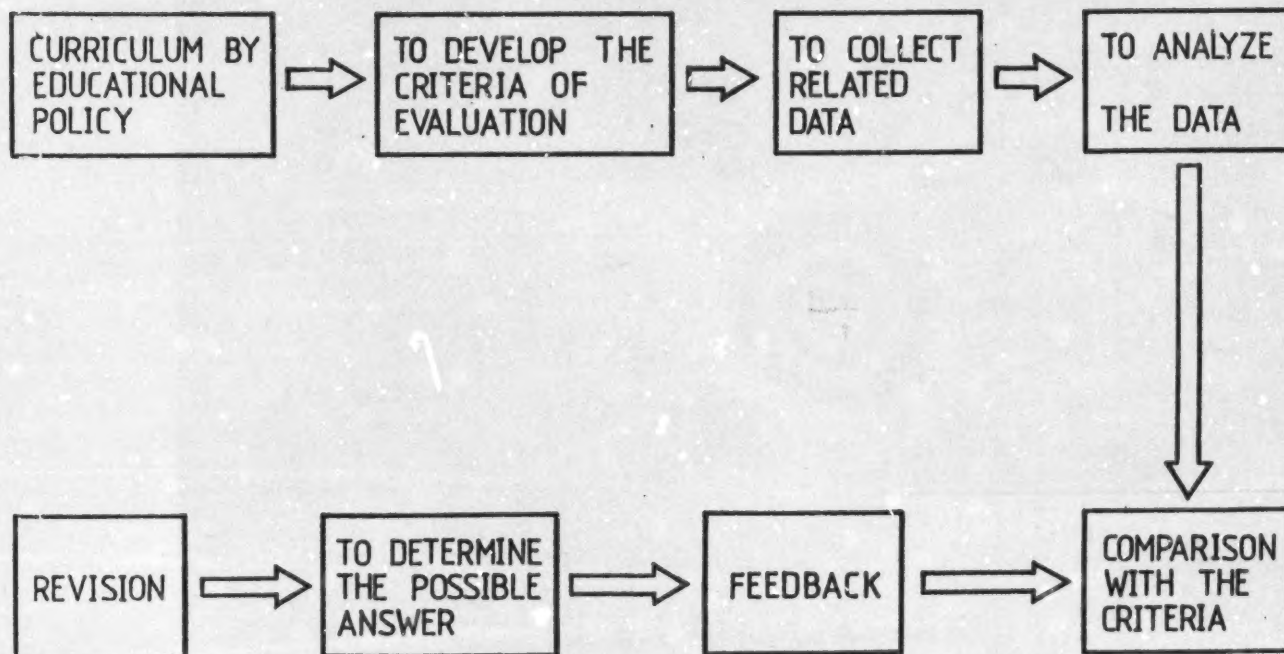


Figure 9 The Controlling Process



VI. Conclusion

A Chinese proverb says "Give a man a fish, you can feed him for a day; Teach him to fish, you can feed him for the rest of his life." A sound curriculum Adaptation system is designed to teach the students to fish. This is very important and beneficial to student, industry and society.

Fortunately, our country has been well motivated to promote appropriate curriculum projects in coping with the socioeconomic changes. Vocational education program, adapted to the industrial development, in Taiwan, R.O.C. will surely contribute a great deal to the whole nation in the near future.

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